ABSTRACT OF THE DISCLOSURE

Apparatus and methods are provided for a Network Address Translation (NAT)-aware unified cache. According to one embodiment, multiple packet-processing applications distributed among one or more processors of a network device share one or more unified caches without requiring a cache synchronization protocol. When a packet is received at the network device, a first packet-processing application, such as NAT or another application that modifies part of the packet header upon which a cache lookup key is based, tags the packet with a cache lookup key based upon the original contents of the packet header. Then, other packet-processing applications attempting to access the cache entry from the unified cache subsequent to the tagging by the first packet-processing application use the tag (the cache lookup key generated by the first packet-processing application) rather than determining the cache lookup key based upon the current contents of the packet header.